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EXAMINER
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MCCORMACK, JOHN PATRICK

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ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* YOUNG-SOO KIM and SOUNG-BONG CHOI

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Appeal 2015-003871<sup>1,2</sup>  
Application 12/094,086  
Technology Center 3700

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Before PHILIP J. HOFFMANN, JAMES L. WORTH, and  
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the rejection of claims 1–6, 8, and 10–15. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> Our decision references Appellants’ Specification (“Spec.,” filed May 16, 2008), Appeal Brief (“Appeal Br.,” filed Aug. 5, 2014), and Reply Brief (“Reply Br.,” filed Feb. 3, 2015), as well as the Examiner’s Answer (“Answer,” mailed Dec. 3, 2014).

<sup>2</sup> Under the Appeal Brief section titled Real Party in Interest, Appellants indicate that “[t]he . . . application is assigned to LG ELECTRONICS INC. . . . No further assignments of this application have been made.” Appeal Br. 1.

According to Appellants, the invention relates to “a sterilizable drying machine using ultraviolet radiation[,] which can perform sterilization by radiating ultraviolet rays into a drum, and a sterilizable drying method in the same.” Spec. ¶ 1. Claim 1 is the only independent claim. *See* Appeal Br., Claims App. We reproduce claim 1, below, as representative of the appealed claims.<sup>3</sup>

1. A sterilizable drying machine using ultraviolet radiation, comprising:

a casing including a front frame at a front surface and having a door frame at an inlet so that washed laundry can be put into the drying machine through the inlet;

a drum rotatably installed inside the casing, to perform drying;

a front supporter installed between the front frame and the drum for supporting a front portion of the drum;

an ultraviolet light source installed at the front supporter, for sterilizing the inside of the drum by radiating ultraviolet rays; and

a control means connected to the ultraviolet light source, for controlling the ultraviolet light source to generate the ultraviolet rays,

wherein a diameter of the drum is larger than a diameter of the inlet of the front frame so that the front supporter is formed in a ring shape inclined inwardly to the inlet, and the ultraviolet light source is mounted in a settling groove at an upper portion of the front supporter, and

wherein the control means is configured to control the ultraviolet light source to perform a sterilization step and to control a rotation speed of the drum so that air flow velocity

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<sup>3</sup> We correct a typographical error in the last paragraph of claim 1. *See* Appeal Br., Claims App.; *see also* Amendment filed on Apr. 19, 2013.

inside the drum is below 2 m/s during the sterilization step and the laundry is evenly shaken.

*Id.*

#### REJECTIONS AND PRIOR ART

The Examiner rejects claims 1, 2, 6, 8, 11, 14, and 15 under 35 U.S.C. § 103(a) as unpatentable over Fujii (JP 02057300 A, pub. Feb. 27, 1990), Hamand (US 6,223,452 B1, iss. May 1, 2001), and Fischer (US 2,248,618, iss. July 8, 1941).

The Examiner rejects claim 3 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, and Creighton (US 1,968,072, iss. July 31, 1934).

The Examiner rejects claim 4 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, Creighton, and Groen (US 1,756,821, iss. Apr. 29, 1930).

The Examiner rejects claim 5 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, and Yang (US 2005/0265890 A1, pub. Dec. 1, 2005).

The Examiner rejects claim 10 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, and either Gerald France (US 2005/0166644 A1, pub. Aug. 4, 2005) or Joslin (US 5,555,645, iss. Sept. 17, 1996).

The Examiner rejects claim 12 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, and Gorman (US 3,877,152, iss. Apr. 15, 1975).

The Examiner rejects claim 13 under 35 U.S.C. § 103(a) as unpatentable over Fujii, Hamand, Fischer, and Orr (US 3,286,359, iss. Nov. 22, 1966).

Answer 2–16.

#### ANALYSIS

Independent claim 1, from which each of remaining claims 2–6, 8, and 10–15 depends, recites a drying machine including a control means configured to control an ultraviolet light source both to perform a sterilization step and to control a rotation speed of a drum so that air flow velocity inside the drum is below 2 m/s during the sterilization step. Appeal Br., Claims App. The Examiner finds that Fujii teaches almost all the limitations of claim 1, including an ultraviolet light source, but does not teach the control means as described above. Answer 2–3. Instead, the Examiner finds that it is Fischer that teaches “[l]imiting the flow of air during a sterilization process” (*id.* at 3), that it would have been obvious to modify Fujii to limit air flow velocity inside Fujii’s drum based on Fischer’s teaching, and that the claimed air flow velocity of 2 m/s would have been obvious because Fischer recognizes air flow velocity as a result-effective variable (*id.* at 3–4). Based on our review of the record, however, as discussed below, we determine that the Examiner’s proposed modification of Fujii does not have the required rational underpinning, and, thus, we do not sustain the rejection of claim 1 or the rejection of any dependent claim. *See* Appeal Br. 4–6; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Fujii is directed to a clothes dryer. Fujii, Title. Conversely, Fischer is directed to bactericidal apparatuses housed in a refrigerator or food compartment, which take air from the compartment into the bactericidal apparatuses, treat the air by irradiating the air with light from tubes to destroy bacteria in the air, and expel the treated air back into the room. Fischer 1–2; *see also* Appeal Br. 5. Fischer describes that moving the air through each of the apparatuses at “slow speed ensures that the portion of the air passing through the passage [in the apparatus] has a sufficient exposure time [to light from tubes T] to receive the bactericidal effect.” Appeal Br. 5; *see also* Fischer 2, col. 2, ll. 21–24.

Thus, operation of Fujii’s clothes dryer, in which “air and laundry . . . is always exposed to the ultraviolet radiation[,] so there is no need to use a low air speed to increase exposure time to the ultraviolet radiation” (i.e., air is not being taken in, treated, and expelled) is significantly different from operation of Fischer’s bactericidal apparatuses. Appeal Br. 5. Because of at least this difference between Fujii and Fischer, we determine that the Examiner’s proposed modification of Fujii to limit air flow velocity *inside or within* a drum, based on Fischer’s teaching of limiting the velocity at which air flows *into and out of* a device, does not have the required rational underpinning to support a conclusion of obviousness.

For the above reasons, we do not sustain the rejection of independent claim 1. Further, inasmuch as the Examiner does not establish that any other reference remedies the rejection of claim 1, we also do not sustain the rejection of any of dependent claims 2–6, 8, and 10–15.

Appeal 2015-003871  
Application 12/094,086

DECISION

We REVERSE the Examiner's obviousness rejections of claims 1–6, 8, and 10–15.

REVERSED